

COST *and* MANAGEMENT

THE OFFICIAL JOURNAL OF

THE CANADIAN SOCIETY OF

COST ACCOUNTANTS & INDUSTRIAL ENGINEERS

INCORPORATED 1920

HEADQUARTERS, 301 MACKAY BUILDING,

66 KING STREET EAST, HAMILTON

R. Dawson, F.F.C.S., F.C.I., Secretary-Manager and Editor

Telephone 2 - 0700

Vol. XIV.

November, 1939

No. 11

.. CONTENTS ..

EDITORIAL	314
ACROSS THE SECRETARY'S DESK	315
LITERATURE RECEIVED	316
NEW MEMBERS	317
CHAPTER NOTES	318
THE PUNCHED CARD METHOD OF ACCOUNTING	324
SALES ANALYSIS AS A MEDIUM OF CONTROL	328
THE SOCIAL ASPECTS OF SCIENTIFIC MANAGEMENT	335
SITUATIONS WANTED	342
COST STUDIES PUBLISHED BY THE SOCIETY	342

Subscription price to non-members, \$5 a year. Single copies 50 cents.
Members desiring 5 copies or more of a single issue may obtain them
at 25 cents each.

EDITORIAL

Membership as a Prelude to a Career

With the Society now established on firm ground one can look forward to vastly increased membership, but the fact should not be lost sight of that such an increase increases the responsibility, not alone of those who guide the destinies of the Society, but also of every individual member.

A tremendous increase can be looked for in the Student membership of the Society and this lays tremendous responsibility on all of us, for we are charged with the responsibility of guiding aright young men who will one day become high figures in the world of Accountancy and Cost Accountancy.

The necessity for accountants to become fully qualified by passing examinations of a recognized society or institute is generally admitted for increasing efficiency in business necessitates such knowledge as is gained through examination.

There is one phase, however, which has been given little attention, and that is that in addition to study and examinations coupled with actual practice, much can be learned through the membership of the individual student in a recognized society such as ours or similar societies.

The personal contact with men of experience, the lectures which may often seem to be "over the head" of the average student, the discussion periods following lectures, this all helps very materially in moulding the student, but there is something else, something concerning which one sometimes thinks we stress far too little.

That is the guidance which can and should be given by older members of a society to those just starting out in life, guidance which is not always obvious, but is nevertheless there, and which is given as a result of experience in the college of experience and hard knocks. It is of immeasurable value to the student.

Youth is often "cocky", those of us who have passed through the various stages know this full well, but the youth who joins a society as a prelude to a career is ambitious rather than "cocky" and he should be encouraged to realize his ambition.

A diploma or degree is of inestimable value to the youth embarking on a career and that is why we say that membership in a Society or an Institute as a prelude to a career is most essential not alone for the examinations, the studies and the diploma or degree, but also for the guidance of older members which can hardly be obtained through any other source but membership.

Across the Secretary's Desk

Recently I spent a week in Montreal, in an endeavour to increase the membership of the Montreal Chapter and also for the purpose of paying a much too long deferred visit to that chapter.

First let me pay a tribute to the officers of the chapter for their extreme kindness and hospitality, and let me say also that I count it a real privilege to number among many friends such men as Walton Blunt, Don Patton, Percy Wright, C. D. LeLievre, the efficient and courteous Secretary of the chapter, and many others far too numerous to mention here. I attended a directors' meeting at which I was paid a tribute I can never forget, and I also attended a Plant Visit to the Miner Rubber Company at Granby where I had the opportunity of getting to know many of the members of the chapter and where I gained much knowledge of the Rubber industry and gained some further knowledge of the kind hospitality of the Quebec people. I was struck with the genuine enthusiasm of the members this season and apparently the chapter is due for one of its best seasons. So far the attendances have been away higher than for some years and undoubtedly this is due in a large measure to the hard working chairman of the chapter, Walton Blunt, and his very efficient Secretary and Board of Directors. I believe much good will result from this visit quite apart from an expected fairly large increase in membership which can be expected, and I can visualize the best season for many years in Montreal.

Since returning from Montreal other things have occupied much attention. It is now generally known that the Society is seeking incorporation in the Provinces of Ontario and Quebec to enable it to grant degrees to those members who pass the examinations of the Society. Matters have proceeded very far in Ontario, and Quebec is examining the situation immediately with a view to applying for these powers in the very immediate future. Other provinces will follow and it is anticipated that this step, which has not been taken without serious thought and several years of investigation by the Dominion Board, will result in the real expansion of our Society.

Certainly we are entering on a new phase of our work and already in some chapters plans have been adopted to meet a new situation. The Niagara Chapter has already commenced a Student or Study group. This is not confined to student members along, but to any and all members who care to attend. The meetings take the place of a short discourse and a round table discussion, and other chapters will follow suit immediately. The purpose of such meetings is primarily to assist members in their studies in order to prepare them for the Society's examinations or to help them in their search for general knowledge.

This is a decided step in the right direction and should do much to attract men of the student class into our Society and assist them in preparation for our examinations.

On another page is listed another large list of new members, and others will be named in the December issue.

Undoubtedly the Society is making great strides and it is up to each and every member to do his part in making the Society stronger in every possible way.

R. D.

Literature Received

Methods in Cost Accounting.

The Chartered Accountant in Australia. September.

A complete and comprehensive article which is well worth reading by all Accountants and Cost Accountants.

Motor Transport Costs.

The Accountant's Journal. September.

A very detailed article on a subject which is coming more and more to the fore in Cost Accounting.

The Standard Brands Case.

N.A.C.A. Bulletin. October 15.

A very fine article by Professor Herbert F. Taggart of the University of Michigan, and which deals with the case involving Standard Brands Inc. and the Standard Brands of California under the Federal Trade Commission. The article contains a summary of the facts and findings in this case, particularly as they apply to Distribution Cost Analysis.

Make It Visual.

N.A.C.A. Bulletin. November 1.

This is an article which is really a plea for the use of charts and other visual methods in accounting procedure.

When Is Selling at a Loss a Profitable Business Policy?

N.A.C.A. Bulletin. November 1.

Here is an article on a subject concerning which too little is written or for that matter spoken. It deals with the problems arising when a company possessing excess capacity considers the use of such capacity for the manufacture of a new product.

Financial Aspects of Depreciation.

The Journal of Accountancy. November.

A short but informative article on a subject of much interest to Accountants.

Inventory Valuation of Public Manufacturing Companies.

Canadian Chartered Accountant. November.

A summary of a round table discussion on a subject of much interest to all Accountants and Cost Accountants.

New Members

Montreal Chapter.

J. N. Loucks, Canadian Lamp Co., Ltd.
Joseph Cormier, Granger Freres Ltee.
W. A. Westwood, Can. Tube & Steel Products, Ltd.
Sydney Roseman, Berger & Schacter Co. Ltd.
W. G. Kemp, R.C.A. Victor Co. Ltd.
R. G. Stirling, Brandram-Henderson Ltd.
L. Ellison, Distillers Corp. Ltd.
S. D. Roberts, Compo. Co. Ltd.
D. H. Balmain, Can. Car & Foundry Co. Ltd.
J. P. Stanley, Stevenson & Kellogg.
L. Presseau, Letang Hdwe. Co., Ltd.
J. Norris, Martin Senour Paint Co., Ltd.
M. Handman, Queen City Paper Co., Ltd.
L. W. Kertland, Commercial Alcohols, Ltd.

Toronto Chapter.

W. J. Kennan, F. W. Woolworth Co. Ltd.
F. E. Wood, National Steel Car Co. Ltd., Malton.
J. R. Tait, Canadian Industries Ltd., Nobel, Ont.
C. H. Black, Dunlop Tire & Rubber Co., Ltd.

Hamilton Chapter.

A. P. Marshall, C. B. Taylor & Co.
R. J. Menary, City of Hamilton.
E. R. C. Bower, City of Hamilton.
S. R. Wharin, Int. Business Machines Co., Ltd.

Kitchener Chapter.

A. E. Reuter, The Savage Shoe Co. Ltd., Preston.

London Chapter.

J. W. Hall, London, Ont.

Windsor Chapter.

W. Jordan, Dominion Glass Co. Ltd., Wallaceburg.

Fort William-Port Arthur.

Gordon M. Brown, Thunder Bay Paper Co. Ltd., Port Arthur.
R. E. Reedhead, J. E. Crawford, C.A., Fort William.
R. J. Hunter, Inspector of Income Tax, Fort William.
E. L. Palmer, Port Arthur.
W. H. Nasi, Detroit Sulphite Pulp & Paper Co., Port Arthur.

Vancouver.

B. A. Robinson, Empréss Mfg. Co., Ltd., Vancouver.
H. J. Swengel, Burroughs Adding Machine of Canada, Ltd., Vancouver.
C. M. M. Harper, Terminal City Ironworks, Ltd., Vancouver.
R. H. A. Humphries, Royal Bank of Canada, Vancouver.

Chapter Notes

Montreal Chapter.

Most all schoolboys—and a few of the more intelligent of the Cost Accounting Fraternity—know that Sunday gets its name from the Sun; Monday from the Moon; and that all the other days in the week got themselves tangled up with some variety of Greek or Nordic deity and, hence, business men and Cost Accountants, being mere mortals, probably the merest of all the merest of mere mortals, got left out in the cold when it came to baptizing our days. It ain't fair, sez we. Anyhow, we started out to do something about the whole affair, and forgetting for the nonce our digressions into other spheres, Montreal Chapter decided to have a RUBBERDAY!

So, on RUBBERDAY, October 28th, 1939, Add, at 8.30 in the morning, Montreal Chapter hied its rubbershod and rubberneck way in a thrice oversized transport bus to Granby, Quebec. (We would be lacking in a just sense of values and amiss in our repertoire if we failed to mention that friend Ferguson missed the bus, but refused to be done out of his trip. It appears that he chartered a private conveyance and rode in state via the Montreal and Southern Counties Railway—there's real enthusiasm for you). Those who haven't seen a Quebec countryside in Autumn, with the still-life spoiled only by the raucous presence of a bus containing some forty-five Cost Accountants from Montreal Chapter, would fail to understand any word-picture we tried to paint and, so, without further ado, we arrive at the plant of the Miner Rubber Company and are royally welcomed by our fellow members, MacLean, Sparling and Kittel, who introduce us to Mr. N. A. Austin, Factory manager, and our host for the day.

It is impossible for your scribes to give all the details of the plant visit. We don the mantle of plagiarism and swipe wholesale from the Montreal Daily Star and the Montreal Gazette (thanks to their reporters who bravely undertook the task of accompanying us on the trip). "At Arctic Bay on Baffin Island, most northerly trading outpost in the Empire and in Australia down under, rubber boots and weatherproof coats are worn, which are made in Granby, Quebec. Members of the Montreal Chapter of the Canadian Society of Cost Accountants and Industrial Engineers saw these things being made when they paid a visit to this busy industrial centre. A party of about fifty, including R. Dawson, of Hamilton, Secretary-Manager of the Society, who was in Montreal on business, made the trip. During the morning a tour of inspection was made of the Miner Rubber Company Limited. Delegates saw how raw rubber, imported direct from British Malaya was converted into all types of waterproof clothing and footwear. They learned that it took anything up to 70 different operations to convert the rubber into a pair of overshoes, and were surprised to find that a great deal of the work was done by hand. They saw cloth being impregnated with a rubber solution to a thickness of three-thousands of an inch; they saw how jointless shoes were made, without a stitch in them, a special type of cement being used; and they marvelled at the speed and accuracy with which fur linings were sewn on to the tops of women's overshoes."

CHAPTER NOTES

Only an expert could fittingly portray the various processes, the laboratory work, the cutting of designs and the continuous flow of multi-sized and styled overshoes marching, rank upon rank, over an endless belt to find haven, mayhaps, upon the foot of a Montreal member. This plant visit will go down in memory as one of the most enjoyable and educational in the history of our Chapter. Those who could not attend missed much indeed.

Immediately after the plant visit, the group attended a reception in the Granby Hotel and were fittingly welcomed as guests of the Granby Board of Trade by Mr. Aime Dorion, President of that body. During the dinner—a sumptuous repast indeed—Mayor Horace Boivin welcomed our group to Granby, during which he recalled the previous visit of Montreal Chapter to Granby some nine years ago, when we visited the Granby Elastic Webb Company and the Empire Tobacco Company.

Mr. Austin addressed the group in formal welcome to his plant and then our Chairman, Walton Blunt, took over the meeting and a regular Montreal Chapter session was in full swing. The following head-table guests were introduced to the meeting: Mayor Horace Boivin of Granby; Mr. Aime Dorion, President of the Granby Board of Trade; Alderman A. C. Smith, Immediate Past President of the Granby Board of Trade; Mr. R. Dawson, Secretary-Manager of the Society; Mr. C. D. LeLievre, Secretary-Treasurer, Montreal Chapter; Mr. Paul Kellogg; Mr. P. W. Wright and Mr. E. J. Loiselle.

Percy Wright introduced the speaker for the meeting, Mr. Paul Kellogg, President of Stevenson & Kellogg Ltd., and hard-working director of the Montreal Chapter, who spoke on "Road Maps, Tours and Detours in Management". (It is hoped that this paper will be available for reproduction in *Cost and Management*). Alderman J. G. Fuller of Granby spoke in thanks to the speaker, and our Chairman, Walton Blunt, then voiced the heartfelt appreciation of the members for the splendid manner in which the Society had been received and entertained by the Executive of the Miner Rubber Company, the Granby Board of Trade and the civic officials.

Members having a flair for bowling hied themselves unto a game with a group of players from the Miner Rubber Company, and lost the battle by a 6-2 margin. As has been remarked in former notes, certain of our members will have no communion with exercise in any form and, hence, whilst some were merrily chalking up strike and spare, Walton Blunt, with all the usual pride of a man showing off his old home town, superintended a sightseeing tour around Granby which took in the points of interest. We learned that the Mont Sacre Coeur was a Brothers training school which had been moved to Granby during the Spanish Revolution (the one before the last one); that there were some 300 students and 70 teachers within its walls. We saw that the classrooms, workshops, grounds and ice plant were beautifully appointed and a credit to the institution. The visit to the Granby Filtration Plant revealed how carefully the city's water consumption of over a million gallons per day was safeguarded. We left Granby, Quebec, convinced that it was a mighty nice place to live in. Granby, Quebec, a fitting monument to the endeavour and zeal of its residents and business men.

Dominion President Speaks

This report covers the splendid turnout for the dinner and meeting held in the Engineer's Club, Montreal, on Friday, November 3rd, when our president, A. G. Howey, spent the evening with Montreal Chapter and how he (no pun intended) dealt with the subject, "Budgetary Control". For those who have sampled the bill of fare at the Engineer's Club, the dinner needs no comment, and the same remark could apply with equal facility to those who have had the privilege of listening to the words of wisdom on "Budgetary Control" as discussed by our President.

It seems that too many accountants are prone to pat themselves on the back and sit back with a feeling of smug satisfaction after they have drawn off the trial balance, footed their cost records, and submitted their monthly or yearly findings of what has happened. The accountant's job is not that of recording past events but rather of providing the compass and laying down the course for the business executive. Mr. Howey started off with the cash condition and how it should be budgeted, and before the evening had well started we were taken on a voyage of budgetary discovery through all the assets, current, fixed and intangible; then we were taken through the rocky shoals of our debts to others and how to compute what they were going to be in advance. We reached the port of Capitalization, surpluses and surplus reserves, and then set forth on a tour of the good ship, "Business", and discovered the navigation instruments—the Manufacturing Statement and the Profit and Loss Statement. We were shown how each part of these statements could be prepared in advance, how the estimated figures were computed and how they were used. The secret of tying up a standard cost system with budgetary control was fully revealed. After reaching the point where an attempt was made to compute in advance the other earnings and other expenditures—non-operating items—we took a trip to Mr. I. O. U. Banker and tried to secure a loan, giving an estimated inventory as collateral. And we are still in the banker's office trying to get that loan as Mr. Howey chose that moment to throw the meeting into open forum. Mr. Howey brought the full force of his practical experience into the discussion rather than the light artillery of mere "Book Larnin".

Messrs. Belanger, Wright, Blunt, Madge, Rolland, Smyth, Patton, Kellogg, and our foundation stone, Professor Thompson, took up the challenge, and with the able support of the seventy-six members present, laid down a barrage, but after bringing into play their heaviest siege guns, the Howey Fort "Budgetary Control" remained uncaptured. We feel proud, very proud, of the capable manner in which the subject was handled by our guest speaker.

Walton Blunt, our Chairman, called upon "The Dean of Our Society"—Lorenzo Belanger—to thank the speaker, and thereupon we left, wiser, very much wiser, cost accountants.

Toronto Chapter.

107 members and guests were present at the meeting of the Toronto Chapter on October 24th. Following a delightful dinner and entertainment.

CHAPTER NOTES

provided under the direction of Harvey Gus Hehn, the Chairman, Mr. C. D. Landell, called the meeting to order. He extended a cordial welcome to the members who were present from Hamilton Chapter, totalling approximately thirty-five, and also to members and guests of the Toronto Chapter.

Mr. A. J. Ballentyne, Chairman of the Hamilton Chapter, spoke a few words expressing the appreciation of the Hamilton members of the Toronto Chapter invitation to join with them in their meeting.

Mr. George Appleton welcomed some fourteen new members of the Toronto Chapter. As he read the names, those present stood up and were accorded a hearty hand-clap.

The Chairman then drew the attention of the meeting to a resolution which was passed at a meeting of the Dominion Directors held on the 22nd September, 1939, regarding the proposed application to the Province of Ontario for a Private Bill giving the Society powers to issue a Degree. He pointed out that this resolution, which had already been passed by the Toronto Chapter Board of Directors, would be voted upon by the members at our next monthly meeting to be held on the 21st of November. He also informed the meeting that full details regarding the resolution, and of the proposed legislation, would be printed and forwarded with the notice of our November meeting.

Mr. H. P. Wright of Hamilton Chapter gave further details as to what the Education Committee and the members of the Ontario Chapters were attempting to do, reading to the meeting a letter which had been sent out to all Ontario members of the Society.

The Chairman then advised the meeting that it was necessary to appoint from the Toronto Chapter, two representatives to the Ontario Chapter, at the same time stating that the Board of Directors had recommended Mr. George Appleton and Mr. H. M. Hetherington as the Toronto Chapter representatives. These members were thereupon nominated as representatives from the Toronto Chapter, and there being no further nominations, were elected unanimously to sit on the Ontario Board.

Mr. R. S. Kellow then introduced, first, the speaker's guest, Mr. W. Needham-Clark, who spoke a few appropriate words, and then the speaker of the evening, Mr. H. B. Berwick of the Manufacturers' Life Insurance Company. Mr. Berwick had chosen as his subject, "In the Wake of a Grecian Galley", which turned out to be a very interesting history of the business of Insurance from the early days of the Greeks to modern times.

Mr. S. H. Sorley, F.C.A., on behalf of the members present, thanked the speaker for his interesting discourse.

Hamilton Chapter.

Well over thirty members of the Hamilton Chapter journeyed to Toronto on October 24th for a joint meeting with the Toronto Chapter, and to say the least, they thoroughly enjoyed themselves. Not only was the entertainment of the best, but the talk by Mr. Berwick was also very much enjoyed.

On November th, over fifty sat down to dinner and over eighty attended the Hamilton meeting when Gordon Sinclair, well known feature writer of the Toronto "Daily Star", spoke on his experiences in China, Man-

COST AND MANAGEMENT

churia and some other Eastern countries. Mr. Sinclair's talk was one of the most enjoyable on record, and while it differed entirely from the general run of topics heard by the members, none the less it was a grand meeting, and at the close the standing vote of thanks and the thunderous applause paid ample testimony to the way in which the members had enjoyed the talk.

On November 22nd, Mr. Maxwell, of Canadian Kodak Co. Ltd., Mount Dennis, will address the members on "Job Analysis". This talk will be illustrated by slides and charts, and another big attendance is looked for.

One December 5th, Mr. Paul Kellogg, President of Stevenson and Kellogg Ltd., Montreal, will address a joint meeting of the Hamilton and Toronto Chapters at Hamilton, and a large delegation is expected to be present from the Buffalo Chapter of the N.A.C.A. Mr. Kellogg will speak on "Road Maps, Tours and Detours in Management". This is expected to be the largest attended meeting in the history of the chapter, and plans are under way for some fine entertainment in connection with this meeting.

Niagara Chapter.

The November meeting of the Niagara Chapter will be held at the Leonard Hotel, St. Catharines, on Tuesday, November 21st, when Mr. J. C. Ross, C.A., of Clarkson, Gordon, Dilworth & Nash, of Toronto, will speak on "Inventory Control."

Mr. Ross has gone to great lengths to ensure the success of this talk, and it is to be hoped that a large attendance will greet him.

On Friday, November 10th, the Study Group of the chapter will be organized, and for the first meeting, Mr. R. R. McLachlan, C.P.A., a valued member of the chapter, will commence a discussion on "Income Tax Problems". The Niagara Chapter is the first in the Dominion to commence these Study Groups and they are to be commended for their efforts. Other chapters, it is expected, will follow shortly.

Kitchener Chapter.

The October meeting of the Kitchener Chapter was a pronounced success, with forty-six present to hear Mr. R. N. McCormack of the Canadian Manufacturers' Association talk on "Sales Tax". The members and guests listened with rapt attention to Mr. McCormack, and at the close there was a real question and discussion period. The next meeting of the chapter will be held on December 14, when Mr. W. S. McKay, Telfer Box Co., Ltd., Toronto, will talk on "Cost Problems in the Paper Box Industry". At this meeting also the chapter will inaugurate a period from 8.00 to 8.30 p.m. which will be devoted to a discussion of members' problems. It is also expected that, commencing in January a Study Group or Student Section will be commenced.

London Chapter.

The season of 1939-40, so far as the London Chapter is concerned, opened in a blaze of glory on October 18th, when thirty-three were present to hear Mr. A. D. Blackwood, Assistant Secretary and Treasurer of the Briggs Manufacturing Co., Detroit, address the members on "Planning For Business". It is hoped to publish Mr. Blackwood's address in "Cost and

CHAPTER NOTES

Management" at a later date, but without doubt it was the best meeting yet held by the chapter. Not only was the talk a really excellent one, but it was listened to with rapt attention and provoked a very fine discussion period at the close. Mr. Blackwood was warmly thanked for his splendid talk and will be welcomed back at any time.

The November meeting will bring Mr. A. H. Lavery, M.A., of Windsor, who will speak to the members and guests on "Scientific Management and the problem of Technological Unemployment". Mr. Lavery is a member of the Faculty of the Extension Department of the University of Western Ontario, and his visit is being eagerly looked forward to. This promises to be the best attended meeting held by the chapter and interest in the doings of the society in London is very high.

Windsor Chapter.

The October meeting of the Windsor Chapter, held at the Norton Palmer Hotel, Windsor, on October 26th, saw the attendance somewhat reduced from the previous meeting, but over twenty-five attended and were well rewarded. The speaker was Mr. G. R. G. Baker of The Land Mortgage Companies of Ontario, and he spoke on "The Problem of Municipal Taxation in Canada as Submitted to the Rowell Commission". The talk provoked a lively discussion, and Mr. Baker was extended a hearty vote of thanks at the close.

For the November meeting, to be held on November 30th, the chapter has secured as guest speaker, Mr. L. D. Stafford of the American Appraisal Company, Detroit, who will speak on "Control of Plant Expenditures and Depreciation".

Fort William-Port Arthur Chapter.

The opening meeting of the Fort William-Port Arthur Chapter on October 23rd, was well attended and very much enjoyed. The speaker on this occasion was Judge A. H. McComber, who spoke on "Contracts". His talk was a very excellent one and numerous questions were asked at the close. For the November meeting it is hoped to secure the Secretary-Manager of the Society, Mr. R. Dawson, and in all likelihood the meeting will be held on Monday, November 27th, and his subject will be "A Simplified Standard Cost System".

Winnipeg Chapter.

The Winnipeg Chapter had a most acceptable subject for discussion at its November 7 meeting, when Mr. Dahl of the Winnipeg Electric Company spoke on the subject of "Cost Accounting as Applied to Public Utilities". Mr. Dahl covered the subject in a very thorough manner and although the attendance was not as large as had been hoped, it was, nevertheless, much better than the previous meeting, and those present obviously enjoyed the talk and the discussion which followed. It is hoped to secure a copy of the address for publication in "Cost and Management" at a later date. It is expected that late in the month Mr. Gibbons of the Hudson Bay Mining & Smelting Company will speak on Cost Problems in that industry.

The Punched Card Method of Cost Accounting

By

S. W. WILLIS

International Business Machines Co. Limited, Winnipeg.

Before the Winnipeg Chapter,

The Canadian Society of Cost Accountants and Industrial Engineers

Tuesday Evening, September 26, 1939.

Mr. Chairman, Gentlemen:

It is a privilege and pleasure to be asked to speak to you this evening. Through the interchange of information and ideas which this Society fosters each one of us will undoubtedly benefit through the experience of the others. The amount of this benefit is in direct relation to our contribution to the discussions. Therefore, Mr. Chairman, I welcome this opportunity of making my contribution at our first meeting of the fall season. The small investment of time and energy necessary to prepare my subject will undoubtedly yield me large returns; for I expect to obtain a great deal of useful information from each one of you gentlemen who will give us the benefit of your experience in future meetings.

The subject I have been asked to talk upon this evening is "The Punched Card Method of Cost Accounting".

It is hardly necessary for me to point out to such a group of men as we have here to-night the importance of obtaining accurate figure facts about your business. No longer will the "rule of thumb" method replace that of scientific management based upon the thorough knowledge of business activity through the use of definite figure facts.

The art of recording business transactions by means of Books of Account was first introduced, more than four hundred years ago, by an Italian, Lucas Pacioli. The principles underlying bookkeeping as we know it to-day have changed little since then. The hand-written books have been superseded, it is true, by modern loose-leaf ledgers and are prepared on typewriters and other key-driven posting machines, but fundamentally, these modern forms and methods are little more than a refined way of keeping the old original type of ledger.

The first satisfactory method which departs from the original Books of Account was introduced by Dr. Herman Hollerith. This was an entirely new method and has become known as the "punched card principle". Dr. Hollerith was one of the statisticians employed by the United States Government to compile the census of 1880. During his work on this census he realized that some mechanical method of accumulating statistics was absolutely necessary in order to obtain the figures before they became out of date. He introduced his punched card method in 1889.

A group of three experts awarded him the contract for compiling the 1890 census on his new machine. The results of this experiment are the

THE PUNCHED CARD METHOD OF ACCOUNTING

basis for the phenomenal development that has taken place since then. Offices of the company which was founded at that time now operate in 79 countries of the world. His method has been applied to practically every field of business and its extension is gaining momentum daily. The use of this method has developed to such a degree that I can, without fear of contradiction, state that it can be applied to practically every accounting job in any office, providing the volume is sufficiently large.

The simplest statement of the punched card method is "A rapid and accurate means for cross-indexing accounting information".

The same beneficial effects that are secured by the use of modern machines in the factory can now be obtained through the use of these modern machines in the office. The drudgery of accounting is now accomplished by the use of a machine. The important work of analyzing the reports and information secured from the machines can now be given to the expert accountants who can do what no machine can ever do, "THINK".

The punched card method is simplicity itself. The only manual operation in the entire plan is a single posting to a tabulating card in the form of punched holes. This unit method of recording business transactions is the basis of the entire plan. After these cards have been punched and proven to be correct they can be classified and re-classified numerous times to produce many accounting reports from the same original postings. The punched tabulating card is a single posting of a transaction which in reality adds, subtracts, multiplies, and posts itself to numerous records.

As the first step in the punched card method is the punching of the card, the second step is naturally arranging these cards in sequence or, in other words, classifying them. This is a completely automatic operation and is performed by the Electric Sorting Machine. This machine not only has the ability to arrange cards in numerical sequence, but can also group them according to any desired classification. This machine will sort cards at the rate of 400 cards per minute, or 24,000 cards per hour. This rapid means of classification entirely eliminates the use of spread sheets and supplementary distribution forms as used under other methods.

The third and final step in this new method is the preparation of the finished reports and statements from the punched cards. This is accomplished fully automatically by the Electric Bookkeeping and Accounting Machine. There are various models of this machine designed to meet the many and varied requirements of business. One model of this machine has a capacity of adding or subtracting 720,000 digits per hour. All operate on the same principle of reading the information punched in the tabulating cards, adding or subtracting the amounts, and automatically printing the finished reports.

The unit posting of business transactions, their rapid classification and recording under the punched card plan make its advantages numerous.

Accounting statements and summaries constitute the working tools of business management. To be of value these statements of how the business has operated must be submitted to the executive as soon as possible after the close of an accounting period. In other words, speed is an absolute necessity when considering any accounting method. A two weeks old newspaper is of little value except perhaps for lighting fires. Reports must be

COST AND MANAGEMENT

timely in order to be of value in regulating the production and distribution problems of business. In this regard, the punched card method is unsurpassed. By this method it is possible, figuratively speaking, to keep your finger on the pulse of your business. The speed with which cards can be punched, sorted, and tabulated, distinguishes this plan. Thus, it is rightly called "the straight-line method" from the original records to the finished reports.

Accuracy is another absolute essential of any accounting plan. Philip P. Hensel in the "Canadian Chartered Accountant" of June, 1937, states:

"It is maintained that the error factor in accounting often costs more than the accounting itself would cost if it were done correctly. In theory, manual methods of accounting should be accurate, but it is a well-known fact that in actual practice inaccuracies occur frequently. In a system using tabulating equipment, the error factor is reduced to a minimum, because:

"1. The average person can punch figures more accurately by means of a keyboard than by writing them by hand.

"2. In the tabulating system the error factor is reduced to the least possible proportion, because once the basic information is recorded in the form of punched holes and verified there can be no further opportunity for error,—no matter in how many ways the basic information has to appear, because the functioning of the sorting and the tabulating machines remains wholly automatic, and the machine automatically translates the holes in the cards into printed letters and figures.

"3. The opportunity for error in posting is eliminated."

Gentlemen, for the reason just outlined by Mr. Hensel, you can readily see that accuracy is an inherent part of the punched card method.

Once the cards have been punched and proved to be correct, they can be sorted into any desired classification and tabulated to produce the report or record required. The same cards can be resorted and retabulated time after time to produce other accounting records with the absolute assurance that each set of statements will balance to the cent with all other statements because they are prepared from the same proven original postings—the punched tabulating cards.

Another important requirement of any good accounting system is flexibility. In other words, the system should make provision for changes in accounting requirements with the least possible confusion and expense.

This is an outstanding feature of the Punched Card Plan. The unit method utilizes the principle of recording all the basic information concerning one business transaction into a single tabulating card through the use of punched holes. The basic information can be assembled into reports in any manner desired. Only that information which is needed at present may be tabulated. The punched cards thus serve as a storehouse of information from which additional figure facts may be obtained at any future time. This is accomplished merely by resorting and retabulating the cards according to the desired classification.

The advantage of flexibility is maintained in every phase of the Punched Card Method. The tabulating card itself can easily be altered to include additional information such as the introduction of a new tax in a billing

THE PUNCHED CARD METHOD OF ACCOUNTING

application; the introduction of unemployment insurance or a bonus plan in a payroll application, etc.

The sorting machine method of classifying is completely flexible. Cards can be grouped and arranged in any sequence according to any classification. Sales cards can be sorted according to the Amount of the Sale, grouping all cards for sales of from one cent to ten million dollars (or higher, if there are any such items). This can be done as easily as sorting them to Salesman or Customer or Product.

The Bookkeeping and Accounting Machine also maintains this element of flexibility through its automatic plugboard. This plugboard is arranged like a telephone switchboard. The incoming call from any of the 80 columns of the card is plugged to the counter or typebar of the machine where the operator wishes the information to be added, or printed. This permits unlimited variations in securing the information in any desired form.

The speed, accuracy and flexibility of this unique accounting method permits great economy. The principle of the multiple use of the original unit posting makes the cost of securing additional information well within the reach of every executive. Earlier closings, more accurate information, and more detailed analysis of business secured will permit the executive to realize greater profits. Machines are often installed where there is no actual saving in clerical cost. Executives often realize that a more detailed fact picture of their business operations will permit them to secure greater profits or make substantial indirect savings and effect economies not related to clerical salaries. Sometimes it is necessary to spend a dollar to increase the net profits by many additional dollars.

Now let us consider the application of this method to cost accounting problems. This is one of the simplest and best applications of the punched card system. By costing sales invoices before punching the sales cards the cost amount can easily be shown. Cost of sales reports showing the gross profit by line, salesman, customer, district or any other classification is then a simple matter of sorting and tabulating, resorting and retabulating. Where standard cost methods are used the standard cost can be compared with the actual and the increase or decrease can be easily secured.

By punching a card for each job worked on each day by each employee, labor costs by job number, charge account or department are easily obtained. These costs can be balanced to the cent with the payroll because both reports are prepared from the same original postings to the tabulating cards.

Cards punched from material requisitions can serve to prepare both the cost of material reports by job number and account number and to prepare a single posting to the disbursed side of the stock records.

The use of the automatic multiplying punch and the relatively new Alphabetic equipment make applications of this type even more efficient. The Multiplying Punch will multiply the quantity by the unit cost and automatically punch the product in the same card. This machine operates at the almost unbelievable speed of 1,000 cards per hour when multiplying 4 digits by 6 digits and punching a 10 digit product. This is over $2\frac{1}{2}$ times faster than any other multiplying machine on the market.

A few years ago electric tabulating machines were used for distribution

COST AND MANAGEMENT

accounting work only. Now, however, with the introduction of Alphabetic Accounting Machines, Automatic Multiplying Punches, Interpreters, Reproducers, Transfer Posting Machines, etc., practically every accounting job in any office can be accomplished by the punched card method.

Alphabetical listings such as the preparation of the Winnipeg Voters' List is now economically and speedily accomplished by the use of punched tabulating cards.

Complete Payroll and Labor Accounting including the preparation of the payroll and the completed bank cheques is now a proven application of this method. The government and several of the largest firms in Canada pay their employees by this method.

Punched cards are now being successfully used to prepare sales invoices in their entirety. Through the use of the Automatic Summary Punch attached to the Accounting Machine cards for the preparation of the customer's monthly statement are automatically secured during the invoicing operation.

Mr. Chairman, there are many other very interesting things that could be said about the punched card method. It may be better, however, to end my brief outline of the subject at this point to allow the members an opportunity to ask any questions concerning the method or its application and I shall be glad to answer them to the best of my ability.

Sales Analysis as a Medium of Managerial Control

By

A. F. TELFER,

Secretary-Treasurer, International Business Machines Co., Ltd.

Before Kitchener Chapter, October 12th, 1939.

One reason why we are in a state of war to-day is because the world's technical development had progressed too quickly and had outstripped our spiritual, educational and economic development. We must catch up in our conduct of business generally and new methods are needed in the field of distribution. Because of the sensitivity of sales to economic and industrial changes and the modification of policies within an organization, the review of sales analysis serves as an important element of managerial control.

The amount of research which has been done in the field of distribution is negligible as compared with the funds and energies devoted to research in other fields. During the past few months, however, Twentieth Century Fund has been probing into the cost of marketing methods in the United States and Canada, hoping to throw new light on the much-discussed question, "Does Distribution Cost Too Much?"

Late in August, its studies completed, the Fund issued a report of its findings. In most cases, it found costs justified "under the present distributive system". More important than the actual findings, therefore, is a series of recommendations for the improvement of marketing methods which supplements the report.

SALES ANALYSIS AS A MEDIUM OF CONTROL

This series of recommendations, or suggestions, represents the opinions of eight authorities in this field, who were selected because of their widely differing interests and points of view. In spite of their widely different backgrounds, however, they came to an unanimous agreement in making their recommendations:

1. A sliding scale of prices for a single article should be adopted, so that a purchase paid for in cash and carried out of the store would cost less than if other services were required.

2. Consumer co-operatives should be encouraged in their work as they serve "an important educational purpose in arousing the interest of consumers in the problems of economical buying".

3. All laws designed to preserve or destroy some special group of distribution structure should be repealed. Chain store tax laws are cited as an outstanding example. On the other hand, these authorities suggest the strengthening of laws designed to prevent and destroy private monopoly.

4. Every effort should be made to improve the methods of distribution cost accounting, so that the consumer can be furnished with the true cost of distribution in the various groups.

Distribution, or sales, is the function of business which places goods at the location where they may be utilized to satisfy a consumer's need. It is the service, which added to physical properties of commodities, constitutes one of the important elements of value. Each factor in the creation of this so-called "place utility" constitutes a specific problem to be solved by management responsible for the sale of the products.

Control over each of the steps of selling and distribution necessitates the compilation of specific data concerning each kind of activity and each controllable marketing factor. The analysis of these records of operations concerning the salesmen's productivity, the product turnover, and the effectiveness of sales promotional activities furnishes the basis upon which plans, policies and future sales programs may be logically formulated. Established trade indices such as bank clearings, payroll and employment summaries of trading areas, data concerning registrations and Provincial licensing and Municipal governments, census studies of the Dominion government, etc., may be substituted advantageously for quotas and budgets to compile many additional valuable reports.

Because of the sensitivity of sales to economic and industrial changes and the modification of policies within an organization, the review of these particular figure facts serves as an important element of managerial control.

The person responsible for the development of a system of record-keeping which will furnish figure facts for management must recognize the difference in requirements of the comptroller and the sales executive. The former is concerned with the maintenance of accounting records in such form that the totals for financial statements may be readily determined; and so that associated records such as accounts receivable, inventory, and accrued commissions are recorded in such a manner that their accuracy may be readily checked and periodically audited.

Sales executives are interested in the same set of financial transactions—analyzed according to various classifications, which will facilitate the exercise of managerial control. These analyses are designed to furnish the facts

COST AND MANAGEMENT

regarding what items are being actively sold, who sold them, who bought them, where were they sold, and related factors.

In broad general terms, the subject matter of sales accounting and analysis constitutes that portion of the accounting and record-keeping routines which it devoted to the recording and analyzing of the financial transactions associated with the distribution of products.

The sales accounting routine may also be referred to as Revenue accounting—since the primary objective of such recording has always been the determination of the totals of various Sales Income accounts for the Profit and Loss statement.

Products sold must also be analyzed extensively. The demand for each item governs the rate of manufacture, or the volume of stock to be maintained. Demand determines what method of packing shall be used. Articles formerly packed in dozens, are now frequently packed in quarter and half dozens or tens. Demand regulates the retention or elimination of products or of entire lines.

Studies of sales of different products according to color, style, size, and price range are commonly used in retail merchandising establishments. The same principles can be advantageously used by manufacturers whenever the same or related factors are involved in the distribution of their products.

The analysis of what was sold according to sub-classifications such as who sold it, where sold, to whom sold, may give valuable cross-analyses that will point out the factors which must be corrected in order to obtain more effective selling.

Close study of the activity of various product lines according to the geographical locations of customers constitutes a valuable form of market analysis. Whenever a wide variation in the sale volume of certain products exists in several territories, the report reveals the existence of a potential demand, which some representatives have uncovered. If the selling points used in the territories with high sales volume are furnished to other representatives, additional markets may be developed.

The analysis of what was sold according to the classes of trade that are purchasing can be used as a guide in placing of advertisements in trade journals or for direct mail solicitation to further stimulate sales.

Any form of cross-analysis concerning what was sold may be prepared from internal records to reveal markets that have not been fully developed. Among the additional specific purposes to be served by these reports are:

- (a) Regulate purchasing of raw materials, semi-finished parts, containers, etc.
- (b) Determine production schedules and personnel requirements.
- (c) Control advertising expenditures.
- (d) Know preference as to price, size, color, put-up, etc.
- (e) Credit finished goods inventory records.
- (f) Check effectiveness of advertising.
- (g) Determine customer preference.
- (h) Determine sales trends.

One of the chief values of such reports is the directness with which comparisons between activities of individuals or branches may be made.

ANALYSIS OF SALES, EXPENSES, PROFIT, BY SALESMAN

Month of April, 1939

Salesman	Gross Sales	Returns and Allow'ces	Net Sales	Cost of Goods	Gross Profits	% to Net Sales	Expense	% to Net Sales	Net Profit	% to Net Sales
Seewall, A.	21,416.83	5,716.80	15,700.03	11,272.60	4,427.43	28.2	1,789.83	11.4	2,637.60	16.8
Heywood, H. M.	17,497.30	3,873.20	13,624.10	9,577.74	4,046.36	29.7	1,171.70	8.6	2,874.66	21.1
Eristol, E.	15,753.81	1,160.21	14,593.60	9,135.56	5,458.04	37.4	1,984.75	13.6	3,473.29	23.8
Hilton, W. J.	12,227.83	2,116.08	10,111.75	6,613.15	3,498.60	34.6	879.72	8.7	2,618.88	25.9
Lawrence, T.	10,110.70	310.40	9,800.30	6,713.17	3,087.13	31.5	774.21	7.9	2,312.92	23.6
Stewart, A.	9,572.81	1,987.49	7,585.32	4,839.31	2,745.91	36.2	963.37	12.7	1,782.54	23.5
Rice, W. R.	8,242.18	3,416.20	4,825.98	3,373.34	1,452.64	30.1	690.08	14.3	762.56	15.8
Drummond, A.	7,731.50	140.10	7,591.40	4,919.39	2,672.01	35.2	1,169.14	15.4	1,502.87	19.8
Combs, A. B.	7,270.21	373.20	6,897.01	4,655.43	2,241.58	32.5	737.98	10.7	1,503.60	21.8
Richmond, B.	6,413.71	715.20	5,698.51	4,034.80	1,663.71	29.2	695.62	12.2	968.09	17.0

The Sales-Expense-Profit report above shows the leading salesman in volume contributed the lowest percentage of gross profit, where salesman No. 3 in volume contributed the highest percentage of gross profit. High man is frequently a low producer of profits due to his tendency to sell low profit items or make concessions costing the Company money.

The dollar values and quantities shown on these reports may be readily converted into index numbers, whenever the utility of the report is increased by such a basis of comparisons.

Salesmen have been graded in the past according to gross business produced; but varying Profits, Returns, Cancellations and Expenses proved the fallacy of rating salesmen in this manner in many cases. Detailed study of revenues often revealed the varying potentialities of different territories and led to the establishment of quotes as a guide in measuring relative effectiveness of salesmen's activities. Any standard of performance which can be created for comparing the efficiency of salesmen may be profitably analyzed at frequent intervals for better management control of operations. The same general analyses prepared for individual salesmen should also be prepared for branches, districts, divisions and broken down by commodity. Here is a report which shows the gross profit and each commodity sold is broken down by Line and Brand.

COST AND MANAGEMENT

COMMODITY ANALYSIS Salesman by Line and Brand

Branch . . .		Month of April, 1939.			
		COMMODITY		LINE	
		Line	Brand	Sales	Gross Profit
Branch	Salesman	Line	Brand	Sales	Gross Profit
1	067	2	143	76.50	30.60
				192.08*	76.83*
1	067	3	143	191.25	76.50
				525.60*	210.24*
1	067	4	171	386.40	193.20
				955.25*	477.62*
1	067	6	145	38.50	19.25
				849.40*	424.69*
				2,522.33*	1,189.38*

Greater productivity of salesmen, better control of products and stocks of finished goods on hand, stimulation of customer purchases, and better territorial coverage are only desirable when they are productive of PROFITS. Sales efforts may be intensive in some endeavors which result in diminishing profit returns and therefore, it is important to make periodic analyses of the profitability of each type of activity.

Discounts allowed to large users on a flat percentage basis may cause a loss in low profit lines. It therefore becomes necessary to make analyses which will enable the executive to control such situations.

The costs of billing, shipping, and record-keeping may frequently exceed the total value of many of the small orders. Based upon analyses of orders received a minimum billing charge may advantageously be established.

Analysis of travelling expenses to determine the average cost "per call" or "per order received" will give a valuable figure to apply against the revenues produced in provincial territories.

These analyses present a wide range for the use of ingenuity in establishing the correct basis upon which decisions can be made. No two business are sufficiently alike to determine arbitrarily the exact form the analyses should take.

SALES ANALYSIS AS A MEDIUM OF CONTROL

Sales Managers are responsible for sales profits. They must sell all the goods and make a profit on each sale. This ideal condition is seldom realized for several reasons. Let us suppose, for example, that the Records Department of a business produces the following monthly reports:

- | | |
|----------------------------|-----------------------------------|
| (a) Profit by Territories. | (d) Profit by Geographical Areas. |
| (b) Profit by Salesmen. | (e) Profit by Products. |
| (c) Profit by Branches. | (f) Profit by Industries. |
| | (g) Profit by Customers. |

PROFIT REPORT BY PRODUCT, BY PACKAGE

Month of April, 1939.

Product	Size Cont'r	No. of Pkgs.	Sales		Cost	Profit	%
			Amount	%			
39	14	275	1,122.00	16.5	561.00	561.00	50.0
	18	986	4,007.15	59.2	2,364.23	1,642.93	41.0
	21	362	1,462.48	21.7	584.99	877.49	60.0

The Profit Report by Product by Package shows 59% of the volume comes from containers, size No. 18, with 41% gross profit. On the other hand, package No. 21 yields 60% gross profit but contributes only 21.7% of the volume. Assuming No. 18 is a half-pound package and No. 21 a one-pound package, this concern might increase their profits by emphasizing the sale of the one-pound package through advertising and other sales methods. They could save investment by dropping the two-pound package.

With such figures the Sales and General Management can control Sales Policy, Sales Plans, Research, Engineering, Customer Relations, Advertising Expenditures, Distribution Methods.

Management is informed concerning where profits are coming from, who is making and losing money, what customers are buying low or no profit merchandise. They also know where they are not making money; where to cut expenses; where to put on advertising and sales pressure—and other means of increasing profits. They will know what products are profit makers and those on which money is lost. They can stop advertising non-profit items or increase sales prices to assure profits.

COST AND MANAGEMENT

MONTHLY AND CUMULATIVE SALES REPORT

MONTHLY AND COMPARATIVE SALES REPORT										Month ending April 30, 1939.		
Salesman	Code	Amount Sold	Location	Name	Dept.	Sales by Dept.	Total Sales this month	Compared with same month last year	Total Sales to date this year	Compared with same period last year		
						Dept.		Inc.		Dec.		
2	7815	25.00	London	City Stores Ltd.								
2	7818	133.00	London	John Jones Co.	4	46.93	279.18		1,400.30			
2	7819	37.00	London	National Mfg. Co.	3	10.05	32.11	32.11	374.60	216.60		
3	7824	309.00	Hamilton	Clark and Clark	1	2.25	451.10	176.10	1,458.33	301.33		
4	7833	16.00	Hamilton	Lang Co.	4	94.02	220.34	146.34	787.41	468.41		
4	7836	144.00	Montreal	Lawson, W. R., Co.	8	119.47	119.47		441.91			
4	7839	29.00	Montreal	Accurate Printing					19.00			
4	7842		Montreal	Montreal Life Ins.	8	5.50	5.50	5.50	96.20	59.80		
4	7845		Montreal	City Public Library					5.50	5.50		
									124.15	37.15		
										184.00		
										161.70		

The final exhibit report is a monthly and cumulative sales report. The third heading "Amount Sold" is the amount sold on the first day of May. He points out what his sales were last month and he is then able to tell the salesmen what their targets are to shoot at, for each of their customers for the coming month.

Under the heading "Department" you have a code for the different products sold. A total is shown for the sales of each Department and then the comparative figures, with the same month last year and with the same period last year.

The Social Aspects of Scientific Management

By

GEORGE SEEBAUER

Director, German Board of Efficiency (Germany)

An Address before Seventh International Management Congress,
Washington, D.C.

We all know how difficult it is to arrive internationally at a definition of the term, "rationalization" and rationalization movement, agreed to by everybody. Great effort and a considerable amount of good will to understand the other side are needed for this purpose. Moreover, one should know precisely and therefore realize what is meant by rationalization in one's own daily work and in one's own country. In this respect, valuable teamwork has been achieved at International Congresses of Previous years. I may therefore assume that it is dispensable to now state in detail the multitude of definitions of the term "rationalization" proposed or agreed to in the past. There is one maxim, however, which seems to be internationally recognized, namely:

COMMON SENSE SHOULD RULE HUMAN ACTION THROUGHOUT OUR LIVES.

Putting this maxim into practice in our daily work has led to what we actually call, "rationalization".

In my point of view, the foremost task of such an important International Congress is to discuss frankly all the economic measures and methods adopted in the different countries. The exchange of practical experience will assist in the understanding of the reasons for a given policy being followed by one country or another. Such a discussion will be of mutual benefit if the parties join in prepared to see the other fellow's point of view.

I said before that the term "rationalization" is interpreted differently by various countries. Its meaning, of course, is bound to depend above all on the state of the technical, economic and social development of a given country. This will always be so because temperament, inclination, talent and living conditions are different.

However, quite apart from the economic development of a given country, its traditions and its economic structure, there exists in all men in all countries, great ideals for the social life of mankind—wish dreams of communal life, I should call them—which are pursued by the economists of all nations with equal determination.

Let us examine above all, these great aims insofar as they touch the social side or rationalization. I fully appreciate that my survey may be incomplete. However, I am anxious to put before you the social aspect of the changes in the requirements hitherto looked upon as essential for genuine rationalization, changes which will be found in every country to a more or less marked degree.

Human life may be described as punctuated by periods of stress and strain through which everyone of us has to pass at various times. We know

COST AND MANAGEMENT

from personal experience that periods of strain are to be encountered in every walk of life; in the family, in the community, in the industrial concern, and also in national economy. Such periods not only compel action, but cause changes. And these changes affect the technical, economical and social development of a nation.

Applying this knowledge to the workman we find: in addition to the concentrated technical progress of economic action in all countries, the so-called social question is to-day the most important problem in the economics of every nation. When in times of economic or political crises the even throb of trade and industry comes to a standstill, the social problems of the country are magnified out of all proportion. It will then be determined whether those responsible for carrying rationalization into effect have given due consideration to social interests, or whether they were simply actuated by motives of private profiteering.

It seems to me that genuine rationalization would be assured of success only if its foremost object were to meet all essential social claims designed to facilitate work and render it safe. There is nothing new in this opinion. But following upon three decades of distress and suffering of many nations, the inherent justice of this opinion has never been so clearly and insistently engraved in our minds as at the present time.

We can see, therefore, in the economic life of different countries, the distinct change of direction on the rationalization front. That is to say, the crux of the rationalization movement is no longer the drive for increased profits or for simple profiteering. It is the working man who now stands in the center of general, social, and economical rationalization work.

I.

I know, ladies and gentlemen, that it would be wrong to bar reasonable self-interest and desire for profit; e.g., the endeavor of a family to establish a home or to secure a living. I also know that the desire of the individual to improve his lot calls for improved living conditions. However, in order to give such a healthy endeavor a permanency beyond a temporary economic upswing, it is necessary in the light of the experience in the last few decades to provide certain guarantees for the working man.

It is not accidental that the working man of every nation who experienced the agony of war and also the comradeship in the trenches now raises these very same claims in favor of a "social" rationalization. We can briefly state them as follows:

1. Provision of work for every able-bodied man and therefore the safeguarding of his existence in accordance with the work done.
2. Safeguard and improvement of working conditions by proper working and production facilities and by hygienic measures.
3. Safeguard of the workman and of his family in case of sickness, invalidity and old age.

You will agree that these principles are compelling in their simplicity. There can hardly be a responsible statesman of any country who would not make these claims a part of his program, having experienced the distress in the last twenty or thirty years.

THE SOCIAL ASPECTS OF SCIENTIFIC MANAGEMENT

I have already emphasized that countries and nations must go their various ways towards attaining their aims. The fact that fundamental changes have taken place in the aims of economic and social rationalization work—at least in those countries which suffered most—seems to me the most important feature to be dealt with by the present Congress in contrast to the reports submitted in the rationalization Congresses of previous years.

It would be interesting to examine in detail the methods which have been adopted to achieve these aims in the different countries. We would meet those who support a free play of forces and also those who favor exclusive state control. You will understand that being the reporter for Germany, I place before you a brief account of the methods adopted in my country as a result of the existing emergency conditions, to be pursued to their logical conclusions.

Recognizing the fact that the social problems of a nation are of decisive importance to its economic health and prosperity, we combined social and economic claims with the national aims. Therefore, economic measures cannot now be taken without regard to the interests of the working man. On the other hand, social measures can only be taken as they are economically bearable. All social and economic measures are to be in accordance with the national aims.

You will appreciate that against this background we thought it of primary importance to prevent the nation's most valuable asset, namely, the intellectual and manual working power of its people, from laying dormant due to unemployment. By adopting a constructive policy of providing and creating work we succeeded in enormously stimulating economics. The fact that every able-bodied worker is assured of and entitled to work has created a most valuable feeling of economic security.

We note with interest the measures adopted in foreign countries for the provision of employment and shall always be prepared to learn from the work done abroad. We are glad to say that all progressive and responsible economic leaders have made it their chief concern to tackle the problems of giving every worker a job which suits him best. Solving this problem appears to me, for the time being, more important than the tendency to increase the wages in any one trade. A further important factor is that the work is performed in healthy and pleasant surroundings, since the right to work should not make us forget the necessity of awakening the pleasure to work.

Great industrialists such as Krupp, Ford, Chatelier—to mention only a few—are outstanding specialists in rationalization and in addition, pioneers in the social field. They consider it just as important to raise the standard of living of their workers by way of wages and facilities, as to study technical rationalization of their organizations. Without hesitation they lend their help and resources to the social side of rationalization. We feel it would be of the utmost value for all nations to take example of the left experience of such great men.

Because we feel this to be such an important issue in our country, we have established a special office called "Beauty of Work", as an adjunct of our great organization, "German Labor Front". Many thousands of reports

COST AND MANAGEMENT

dealing with the conditions of workrooms, shops, hygienic measures and general working environment have been compiled by this organization, thus deepening its knowledge and making use of outstanding achievements of progressive industrialists. This urges others to do likewise with the means at their disposal. While it is compulsory that the official bodies concerned with the supervision of trade and industry put a stop to real abuses, this voluntary initiative endeavors by canvassing and exploration to do more in setting up the working place and in equipping the work shops than what has been hitherto considered necessary from a pure business point of view.

Ladies and gentlemen, we in Germany place great faith in the appeal we make to the good will and the good sense of the employer and employee alike, and it is the increasing readiness on the part of the employer to effect changes which assure us of ultimately leading to a permanent change of outlook of all employers concerning their social liabilities and in turn the success of our efforts.

From what I have stated you will understand the importance we place in our efforts to create a feeling of increasing economic security and contentment. We know that personal contentment can never be given to the working man with the wage envelope alone. The surroundings in which a man works and lives will always play an important part in creating this feeling of contentment.

Attention must be paid not only to the worker during business hours, but also to the hours devoted to rest and relaxation. There is no need for me to go into detail here because the "Strength Through Joy" movement in Germany and similar institutions elsewhere are familiar to everyone interested in these problems. May I remind you that several millions of working men spent their paid holidays in the most beautiful part of my country.

Safeguarding and improvement of working conditions by proper working and production facilities and by hygienic measures was the second point which I mentioned in stating the claims in favor of a "social" rationalization. Let us remember here that our modern rationalization movement began with the working and production process. Let us also call to mind the pioneer work of Frederick W. Taylor, who may be described as one of the fathers of the working technique. He studied the movements of man in performing his work in order to arrive at maximum output with minimum effort. Since Taylor, improvements in the working process of every type of employment have been evolved in the laboratories of all countries, in the psychological and physiological institutions and in the work shops themselves as a result of the close observation of each single working phase. Numerous International Congresses gave consideration to these questions. Looking back it will be sufficient for us to know that many valuable investigations have been carried out, especially the study of the two important spheres, "The Provision of Labor" and "The Execution of Work". Under the head of "Provision of Labor", we encounter the great problem presented by the "vocational selection", which the German delegates last reported on in London. We still endeavor, with the assistance of public and industrial bodies to reach a stage where the right man gets the right job. We recognize more and more that it is wrong to rely on psychotechnical tests and

THE SOCIAL ASPECTS OF SCIENTIFIC MANAGEMENT

individual experiments in determining the suitability of juvenile and adult workers for various trades. On the contrary, we judge the character and talent of a person by means of a comprehensive analysis based on capacity and personal characteristics. It seems to us a most desirable aim is to assure the right use of labor, that is to say, to perform work economically without exhausting labor resources in the interest of men and national economy. At the same time, we endeavor to give preference to work which is of secondary importance. This is a noble attempt on our part to unify the German rationalization movement both in a social and economic respect.

Since I want to draw your attention to the new aspects of social rationalization, I may be excused from dealing at length with those features of modern production processes which were introduced with a view to facilitating the job of the worker.

Similarly, I will refer to working hygiene but briefly. You all know that despite all efforts there still exists to-day trades which must be recognized as injurious to the health of the human being. We are not yet in a position to prevent workers in certain industries from becoming fatigued before they have reached the age of 45, with the result that they have to leave the production process and are thrown upon relief in one form or another. These factors should give us food for thought and strengthen our resolution that all economic measures taken in a social community should benefit man firstly, and consider the monetary yield, secondly.

Then we recognize the justice of the third point when I mentioned in stating the claims in favor of a "social" rationalization; namely, safeguard of the working man and his family against illness and invalidity in old age, as an essential condition for securing a real inner peace within the community.

Ladies and gentlemen, I was anxious to sketch for you, so to speak, the great wish dream of the workers in all parts of the world. The conclusion to be drawn from it is clear; it is no longer permissible for the rationalization work of any country to be concerned with economic aims alone. On the contrary, it should from the outset, give due consideration to the important human interests involved. In other words, it should be founded on and be in harmony with the aims and requirements of the nation's life.

II.

Seen from this angle, rationalization of economics recovers its fundamental justification. It is possible here to give the following guiding principles which may be regarded as applicable both to the economic and the social side of rationalization:

1. It should be the task of trade and industry and therefore the aim of economic rationalization work to create the material basis for the maintenance of development of the standard of living and the pursuit of the life aims of the nation.
2. In order to be able to realize this task, rationalization movement should be in harmony with the vital interests and the present philosophy of life of the nation. In other words, every economic rationalization must be subject to the existing social, economic and cultural demands of the nation.

COST AND MANAGEMENT

3. The community principle must be the pivot upon which the constructive work of the nation turns. Recent experience of constructive work shows that every member of a nation must be accorded the right to acquire through his work a decent standard of living and a share in the social product of his nation. On the other hand, this right must arise out of the duty to render service to the community.

I need only remind you of two important tasks, that commodities should be made available in adequate quantities and at fair prices at the place of consumption, and that income should be distributed in such a way as to be commensurate with the work performed, and used to acquire a share at the place of consumption.

You see, ladies and gentlemen, that without prejudice to the social demands which I have already treated, it is above all necessary, to begin with, to provide the basis for an improved standard of living by increasing production. The abundance of goods existing in some parts of the world should not be allowed to confuse us because all over the world as well as in my country, there exists an enormous demand of the masses for the goods consumed in everyday life.

We were thus driven, in our country, to increase the production with all the aid offered by rationalization in the field of production, in the sphere of standardization, scientific management, etc. In doing so, we were not exposed to the usual dangers of a crisis due to overproduction because we do not regard production (nor trade, nor rationalization movement) as a separate entity, but as subordinated to the national aims of establishing the country's life. In other words, the technical and commercial aspect must submit to the social claims and the national economic interests.

Under such social and economic leadership, labor-saving processes, for instance, can now only lead to truly sound results; because such labor-saving devices will only be introduced and retained where it is certain that the labor released by these methods have definite need elsewhere. This principle, therefore, eliminates once and for all the serious danger of the machine throwing men onto the scrap heap.

In order to carry such a rationalization policy into effect, it is essential to recognize and to define the important economic tasks of the country. Every country will pursue its own rationalization policy based on its experience and customs, and its tasks to be fulfilled. A country which possesses natural rubber in abundance does not need to produce the synthetic article which we call buna. A country rich in ore does not need to work up low grade material. A country which is predominantly agrarian in character does not know the problem of the industrial worker and yet, ladies and gentlemen, the principles described hold good for every country. Sooner or later the leaders of all countries will be compelled to make these problems the spearhead of their program, thereby identifying economic policy with social policy. Furthermore, the trade and state policy governing raw materials, finance, credit and foreign trade and exchange must be devoted to the solution of these great tasks. I believe that no modern country can dispense with the unlimited work involved by such a cautious and yet progressive central economic control. The efforts made in this

THE SOCIAL ASPECTS OF SCIENTIFIC MANAGEMENT

respect to an increasing extent by so many governments seem to prove that it is considered to be no longer possible in the face of the growing distress among the people to wait until "everything has righted itself of its own accord"

Only when full employment is reached in industry, will our technical progress, scientific management and rationalization really become sound and necessary, if not vitally essential. In particular, the working man will then know that neither machine nor any other labor-saving device will be able to force idleness upon him. He will retain the feeling of economic security and the loss or change of a job under these conditions of assured work and rationalized economic policy will no longer be a social tragedy, but simply an essential regrouping of productive forces. These then are the stages on the road toward improved living conditions, based upon increased efficiency and therefore higher production.

Ladies and gentlemen, I have endeavored to show you how, in my opinion, the rationalization movement will have to adopt itself in the future to the growing social and economic aims of the nations. Engineers, business men and workers who have grown up in the rationalization movement have reached a point whence they must march in step with those responsible for the economic and social policies of their country.

I am conscious of the fact that there always will be in life a deep gap between aim and deed, but I also know that an optimum in life can be attained by the individual, by a nation, and lastly by the civilized world only in the event that the aims are fixed and are convincing in their simplicity so that everyone—above all, the working man—is prepared to work and to live for them.

Loose Leaf Forms Binders

Trays, and Visible Index Systems.

Lithographed Letterheads, Invoices, Statements, Drafts, Cheques, etc.

Continuous Typewriter Forms in all styles with carbon interleaved when desired, and various devices for use with them. Autographic Registers, desk or portable types, with forms to suit your requirements.

Shipping and Factory Tags.

Handisets for all purposes.

Business Systems Limited

Manufacturers of Business Forms in sheets or webs for every purpose, printed or lithographed.

52-56 Spadina Ave. — Toronto 2

Cost Accountants

Now is the time to commence preparations for the Canadian Society of Cost Accountants' examinations. The Shaw Correspondence course meets the requirements for these examinations and a post card will obtain full information quickly.

PREPARE NOW.

DO NOT DELAY.

SHAW SCHOOLS LIMITED

Bay and Charles Streets

Toronto

and try

The Shaw Way

The Sure Way

SITUATIONS WANTED

Young man with several years' experience in Cost Accounting in Metal Stamping and Foundry work, seeks position. Would go anywhere for good position, and would accept moderate salary to commence. Apply Box 43, "Cost and Management".

Young man, single, with many years' experience in Banking and Accounting. Graduate in Cost Accounting, and with experience as Office Manager, seeks change in position. Fully capable of taking charge, and remuneration asked only moderate for good start. Well recommended and is earnestly seeking a real opportunity to display knowledge and ability. Apply Box 45, "Cost and Management".

Young man, at present engaged, desires position of Cost Accountant in Toronto or vicinity, with opportunities for advancement. Has had several years' practical experience as Cost Accountant, is well qualified and is at present studying for second year Society examinations. Apply Box 26, "Cost and Management".

Will install and operate cost system permitting cost and inventory control, monthly profit and loss statements for group of smaller industries in Western Ontario, or if for one company fill position of accountant, comptroller, internal auditor or treasurer. Apply Box 46, "Cost and Management".

Young man, at present employed, desires change in position in Montreal, or vicinity. Holds Montreal Board of Trade Diploma, and is completing Society examinations. Three years' accounting experience and has excellent references. Apply Box 47, "Cost and Management".

A thoroughly experienced Cost and Industrial Accountant desires position with sound company. Well versed in cost and production work and all phases of accounting. Experienced also in Office Management, Purchasing, etc. Particularly well versed in the Canning and Food Industry. Apply Box 48, "Cost and Management".

Cost Accountant, at present resident in Toronto, seeks position with progressive company. Particularly well versed in the Printing Industry, but has sound knowledge of Cost Accounting and is at liberty to go anywhere for good position. Apply Box 50, "Cost and Management".

Young man, at present engaged, seeks change to sound progressive company. Has had experience as Chief Accountant, Cost Accountant, Public Auditing, Payroll work, etc. Thoroughly practical and experienced. At present working in Ontario, but distance no object for good position. Box 51, "Cost and Management".

CHANGE FOR PROGRESS!

Industrial engineer, university graduate, in his 6th year with present employers would consider change.

Has had ten years' practical shop experience in cost methods, motion and time study, production planning and control, estimating, cost reduction and special investigations.

Will produce results and effect economies.

Age 30; married; location immaterial.

INVESTIGATE!

Box 53, "Cost and Management".

TO EMPLOYERS

We have on our list several young men who have either completed or are studying Accounting and Cost Accounting. These young men are anxious to obtain a start. They are studious and ambitious and are anxious for practical experience. What have you? Apply Box 52, "Cost and Management".

COST STUDIES PUBLISHED BY THE SOCIETY

(Copies available at 50 cents each).

Accident Costs, Budgeting and Allocating. Robt. D. Gracey	Nov., 1934
Administration and Selling Costs, Distribution of. A. E. Keen	Apr., 1929
Appraisals and Plant Records. H. C. Baker	Feb., 1930
Automobile Assembly Costs and the Financing of Sales. A. C. McAlpine	Sept., 1932
Aviation Costs. J. Hunter	Apr., 1929
Bank, Office Machinery in a. Angus Macdonald	Aug., 1930
Bankruptcy, Factors Contributing to. L. N. Buzzell, C.A.	Aug., 1934
Billing and Controlling Accounts at Montreal L., H. & P. D. D. McInnes.	Dec., 1931
Bonus Methods. P. E. Dufresne	May, 1933
Brewery, Cost System for a. W. J. Cope	Jan., 1937
Budgetary Control. John Fowler	Jan., 1934
Budgetary Control, Cost Accounting and. K. A. Mapp	July, 1934
Budgetary Control	July, 1934
Business, Control of, Through Budget. H. C. Perry	Sept., 1938
Business Organization. William Snaith	July, 1937
Cost Data, Value of, to Management. G. R. M. Dingle	Dec., 1938
Cost Data, Preparation of. H. M. Loree	Nov., 1938
Cost Information—Presentation of to Foremen. E. M. Detwiler	Dec., 1937
Carbonated Beverages, Costs in. C. D. Landell	Dec., 1935
Chocolate Company, Cost System for. Geo. F. Cassidy	Aug., 1935
Charts in Business, Use of. W. A. McKague, M.A.	Mar., 1933
Control of Labour and Material in Process. W. M. Lane	Sept., 1930
Cost Accounting, Efficiency of	Aug., 1938
Cost Accounting in Life Insurance Companies. G. Fay Davies	Feb., 1935
Cost Finding, Methods of. D. R. Patton, C.A.	Apr., 1936
Cost Studies on Proposed Change in Process. C. E. Shumaker	May, 1931
Cost System of The Norton Co. A. S. Merrifield	May, 1929
Costs and Overhead in a Department Store. A. E. Walford, C.A.	July, 1931
Cash and Balance Sheet Budgeting. A. G. Howey	Dec., 1937
Cost Accounting for Distribution and Selling	Jan., 1938
Cost Accounting by Machine Method. G. W. Kemp	Mar., 1938
Cost Accounting, Efficiency of. W. Johnston	Aug., 1938
Credit Executive, His Work and Philosophy. E. E. Webster	Mar., 1939
Daily Newspaper, Costing a	June-July, 1938
Department Store Management and Accounts, Some Phases of. G. F. Klein	Sept., 1930
Depreciation on the Basis of Business Volume, Fixing. B. W. Lang	Feb., 1935
Distribution, Cost of. G. H. Armstrong	Dec., 1934
Duff Report and Its Underlying Principles. D. W. Buchanan	Dec., 1933
Differential or Marginal Costs. R. G. H. Smalls	Apr., 1939
Economics of Cost Accounting. E. D. McCallum	May, 1930
Electrical Power Cost, Control of. H. R. Hatcher	Jan., 1933
Electrical Power Costs. A. N. Sainte Marie	Feb., 1933
Exchange Fluctuations in Relation to Accounting. A. E. Cutforth, F.C.A.	Sept., 1933
Executive Training, A New Technique in. A. B. Gates	Aug., 1936
Executive Requires From the Cost Accountant, What the. C. D. Landell	Nov., 1936
Earned Hour Wage System. J. J. McGill	Mar., 1938
Factory, Planning and Building of a Modern. W. Bruce Riddell	June, 1932
Financial Statements, Construction & Interpretation of. A. E. Nash, C.A.	Sept., 1932
Fire and Use & Occupancy Insurance. A. J. Mylrea	July, 1932
Foundry, Cost Accounting System for a Journal Bearing. J. E. Beauvais,	Apr.-May, 1937
C. G. A., A.C.I.S.	
Fraud in Accounts—Its Prevention and Detection. H. W. Blunt, C.A.	Aug., 1934
Fuel for Thought. W. T. Brickenden, B.A.Sc., M.E.	June, 1936
Fixed Assets—Accounting For. P. W. Wright	Jan., 1939
Gas Company, Accounting and Costing Problems of a. E. J. Tucker	Sept., 1934
Group Bonus System of DeForest Radio Corporation, Ltd.	Oct., 1930
Group Incentives. R. Presgrave	June, 1932
Hydro Electric Power Costs. R. A. C. Henry	Nov., 1937
History and Development of Accounting. S. D. Reavely	Feb., 1938
Indirect Labour, Control of. R. Presgrave	Aug., 1932
Industrial Engineering, Advantages of. P. E. Dufresne	May, 1931
Industrial Engineering and Its Relation to Standard Costs. J. E. Goudey	July, 1931
Industrial Engineer to Accountancy Department, Relation of. F. H. Vercoe	Apr., 1935
Industrial Development, Some Aspects of Sound. J. M. Davidson	Sept., 1932
Industrial Relations. F. M. Morton	Apr., 1938
Incentive and Security, Balancing of. R. E. Flanders	Dec., 1938
Insurance. E. L. McLean	Apr., 1932
Insurance. B. A. Dugal	Apr., 1933
Insurance of Employment. Sir James Woods	Apr., 1938
Inventory, Preparation and Taking of. C. H. Black	Apr., 1930
Inventory, Preparation and Taking of. J. A. Parkhill	Apr., 1930
Inventory Control. H. Latter	Nov., 1930
Investments and Investment Principles. W. W. Foot	Dec., 1933
Job Analysis. Harry Taylor	May, 1936
Job Costs, Fundamental Principles of Finding and Controlling. V. Halberg	Apr., 1937
Labour's Aims and Responsibilities. R. J. Watt	Jan., 1939
Labour Incentives. W. S. Ferguson, C.A.	Jan., 1937

COST AND MANAGEMENT

Labour Measurement Through the Bedaux Method. J. J. Armstrong	Sept., 1934
Laundry Industry Today H. E. Holyoak	July, 1932
Leather Tannery, Cost Accounting in an Upper. G. F. Cossar	May, 1935
Managerial Control. Duncan C. Ferguson	July, 1936
Management's Aims and Responsibilities. L. H. Brown	Jan., 1939
Management's Responsibility to Society. A. W. Robertson	Nov., 1938
Minimum Wages in Relation to Costs. Gus Francq	Apr., 1936
Money, Consideration on Cost of. Rene Morio	Mar., 1930
Montreal Tramways Contract. Arthur DuPerron	June, 1932
Maintenance Expenditure, Control of. E. M. Detwiler	Mar., 1938
Mining Accounting. Frank Wilcox	Mar., 1939
National Recovery Act, Accountants and the. C. O. Wellington	Mar., 1934
New Industry, Launching a. R. R. Thompson	Apr., 1930
Newspaper, Making of a Modern. P. J. Salter, C.A.	Jan., 1933
Newsprint Industry in Canada. John Stadler	Oct., 1935
Newsprint Industry, Accounting in the. P. H. Hunt	Jan., 1936
Overhead, An Outline of. L. Belanger, C.G.A., C.P.A.	May, 1933
Production Cost From a Control Post. G. A. Rochford	Mar., 1938
Paint Industry, Costs in the. P. Probyn, C.A.	May, 1930
Paper Company, Cost System of. A. Lanthier	Jan., 1930
Paperboard Plant, Costs in a. G. F. Mayhew	Oct., 1934
Personnel in Industry. J. E. McPherson	May, 1932
Perpetual Inventory and Stores Control. D. R. Patton, C.A.	Feb., 1933
Plant Ledger, Installation and Control of a Modern. J. P. Masterson, C.G.A.	Sept., 1929
Plant Records for Accident Experience. T. N. Dean, M.A., F.S.S.	Oct., 1931
Plant Engineering in Relation to Costs. W. T. Brickenden	Jan., 1935
Preparation and Use of Cost Data. A. S. Baillie	May, 1931
Production Control. G. E. Steel	Jan., 1933
Production Planning. W. F. Titue	Dec., 1936
Production Planning and Control. C. A. Henderson	May, 1935
Profitable Sales Prices, Their Costs, and Proof of Both. T. Smyth	Jan., 1935
Purchasing Policies Constructive. F. A. Hayes	Oct., 1938
Research in Canada. Maj.-Gen. A. L. McNaughton, C.B., C.M.G., D.S.O.	Oct., 1937
Retail Chain Meat Markets, Accounting for. T. F. Phillips	Mar., 1934
Reports, Presentation of, From an Executive Viewpoint. J. J. McHardy	Sept., 1934
Rubber Industry, Cost Accounting in. J. Graham Barrow	June, 1929
Rubber Industry, Accounting Control in. H. P. Nellis	June, 1929
Sales and Distribution Expense, Control of. David M. Farish, C.A.	July, 1932
Sales Statistics. Martin I. Pierce	Aug., 1932
Scope of Industrial Engineering in Industry. Harry F. Wilson	June, 1931
Selling Prices, Relation of Costs to Determination of. E. A. Camman	Sept., 1938
Standard Costs. Paul E. Gnaedinger	Oct., 1935
Standardized Costs. R. J. Mouncey	Dec., 1938
Standard Costs, Objectives of. E. A. Green	Sept., 1938
Statistics. Prof. Herbert Tate	June, 1934
Statistical Data & Reports for Management Control. E. D. MacPhee	May, 1932
Steel Canister Industry, Cost System for. D. Peddie	Nov., 1932
Textile Plant, Process Costs in a. K. M. Horton	May, 1934
Time Study—Relation of With Cost Accounting. G. Lowe	Oct., 1938
Traffic Problems and Distribution Costs. C. LaFerte	Mar., 1933
Transit Utility, Outline of Accounting and Costing of a. J. G. Coulthard	Sept., 1934
True Costs and Management Control. J. E. McKee and W. D. Jones	May, 1936
Unemployment Insurance and Employment Assurance. R. Dawson	Feb., 1933
Uses of Costs. W. A. McKague	May, 1932
Valve Manufacturer, Cost System for	Sept., 1937
Wage Incentives. R. K. Williams	Oct., 1931
Wage Incentives. G. W. Rice	May, 1932
Wage Incentive and Cost Control. A. Sankoff	May, 1938
Woollen Mill, A Cost System for. L. Galipeau, C.G.A.	Oct.-Nov., 1933
Wage Office—Function of. Gordon Lowe	Jan., 1939

